

**Identification of Achievable Performance Standards
Source Category: Polyester Resin Operations**

Regulated Component	Pollutant	Rule/Measure/Date					
		San Diego APCD Rule 67.12 Polyester Resin Operations Effective 5/15/96	Shasta AQMD Rule 3: 13 Polyester Resin Operations Last Revised 6/6/95	San Joaquin APCD Rule 4684 Polyester Resin Operations Adopted 5/19/94	Yolo Solano AQMD Rule 2.30 Polyester Resin Operations Last Revised 8/25/93	Ventura APCD Rule 74-14 Polyester Resin Material Operations Revised 5/26/92	
		Performance Standard					
Compounds exempt in all rules.	VOC	Carbon monoxide Carbon dioxide Carbonic acid Metallic carbides or carbonates Ammonium carbonate Methane	Carbon monoxide Carbon dioxide Carbonic acid Metallic carbides or carbonates Ammonium carbonate Methane	Carbon monoxide Carbon dioxide Carbonic acid Metallic carbides or carbonates Ammonium carbonate Methane	Carbon monoxide Carbon dioxide Carbonic acid Metallic carbides or carbonates Ammonium carbonate Methane	Carbon monoxide Carbon dioxide Carbonic acid Metallic carbides or carbonates Ammonium carbonate Methane	
There are approximately 20 additional compounds exempt in the following districts, unless indicated otherwise: COLAPCD SACAQMD SBAPCD SCAQMD SDAPCD SJUAPCD YSAQMD VENAPCD	VOC	Including the following: perchloroethylene (tetrachloroethylene), acetone, ethane, 1-chloro-4-trifluoromethyl benzene (parachlorobenzotrifluoride, PCBTF, and cyclic, branched, or linear completely methylated siloxanes (VMS).	Does not exempt the 20 additional compounds.	Including the following: ethane, acetone, parachlorobenzotrifluoride, and cyclic, branched, or linear completely methylated siloxane compounds.	The 20 additional compounds.	Including the following: cyclic, branched, or linear completely methylated siloxanes (VMS).	
General Polyester Resin Material	VOC	x <35% by weight monomer content	x <35% by weight monomer content	x <35% by weight monomer content	x <35% by weight monomer content	x <35% by weight monomer content	
Resin Containing Vapor Suppressant	VOC	x weight loss from VOC emissions < 60 g/sq. m	x weight loss from VOC emissions < 60 g/sq. m	x weight loss from VOC emissions < 60 g/sq. m	x weight loss from VOC emissions < 60 g/sq. m	x weight loss from VOC emissions < 60 g/sq. m	
Closed-mold System	VOC	Yes, no limit.	Yes, no limit.	Yes, no limit.	Yes, no limit.	Yes, no limit.	

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		Performance Standard				
High Strength Materials	VOC	None.	x <48% monomer content by weight	None.	None.	See Specialty Resins.
Specialty Resins	VOC	See corrosion-resistant materials and fire retardant materials.	x <50% monomer content by weight	x Use low VOC with < 50% monomer content by weight	x Use low VOC with < 50% monomer content by weight	x <50% monomer content by weight
Corrosion-resistant Materials	VOC	<50% monomer content by weight	x <48% monomer content by weight	See Specialty Resins.	See Specialty Resins.	See Specialty Resins.
Fire Retardant Materials	VOC	<50% monomer content by weight	x <42% monomer content by weight	See Specialty Resins.	See Specialty Resins.	See Specialty Resins.
Cleaning Materials	VOC	x A VOC reclamation system shall be used unless the materials contain < 1.7 lb VOC per gallon (200 gm/l), or the materials have initial boiling points > 190°C or the combined usage of materials not complying with either condition is < 0.5 gallons average per operating day calculated from monthly monitoring records. Solvent residue from	x When cleaning materials containing >1.7 lbs of VOC per gallon or having initial boiling point < 190° C exceeds 4 gallons per day, a cleaning material reclamation system with >80% efficiency shall be used. Solvent residues for the system shall be < 20% VOC by weight.	x Cleaning materials containing > 1.7 lb VOC/gallon shall not be used except; 1)in enclosed equipment cleaners; or 2)to clean molds, spray equipment or other dispensing equipment tools used in gel coat or specialty resin operations provided that the use of cleaning materials <4 gallons/day.	x When cleaning materials containing >1.7 lbs of VOC per gallon or having initial boiling point < 190° C exceeds 4 gallons per day, a cleaning material reclamation system with >80% efficiency shall be used. Solvent residues for the system shall be < 20% VOC by weight.	x When cleaning materials containing >1.7 lbs of ROC per gallon or having initial boiling point < 190° C exceeds 15 gallons per calendar week, a reclamation system shall be used. Residues for the system shall be < 20% ROC by weight.

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		Performance Standard							
Cleaning Materials (continued)			reclamation system shall contain < or equal to 20% VOC by weight.						
Gel Coat	VOC		See clear gel coat and pigmented gel coat.	See clear gel coat and pigmented gel coat.	See clear gel coat and pigmented gel coat.	Use low VOC with < 45% monomer content by weight (treated as pigmented gel coat due to clear gel coat standard)	See clear gel coat and pigmented gel coat.		
Clear Gel Coat	VOC	x	<50% monomer content by weight	x	<50% monomer content by weight	x	Use low VOC with < 50% monomer content by weight	x	<50% monomer content by weight
Pigmented Gel Coat	VOC	x	<45% monomer content by weight	x	<45% monomer content by weight	x	Use low VOC with < 45% monomer content by weight	x	<45% monomer content by weight
Alternative Emission Control Requirements (in lieu of meeting process standards)	VOC		None.		>85% control and capture efficiency		>85% control and capture efficiency		>85% control and capture efficiency
Pultrusion Operations	VOC		None.		None.		None.		None.
Surface Preparation	VOC	x	Conduct all dry sanding, grinding and cutting operations of polyester resin which contains fiberglass either inside a controlled enclosure or		None.		None.		None.
Surface Preparation									

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		Performance Standard				
(continued)		using a controlled process. For marine vessel repair operations this requirement shall apply only for sanding, grinding or cutting operations conducted on the exterior of a vessel hull. Excludes portable drilling operations.				
Spraying Operations	VOC	Use airless spray, air-assisted airless spray, electrostatic spray, high-volume/low-pressure spray. x For touch-up and repair, a handheld air atomized spray gun with a resin container as part of the gun may be used.	Use airless spray, air-assisted airless spray, electrostatic spray, high-volume/low-pressure spray.	Use airless spray, air-assisted airless spray, electrostatic spray, high-volume/low-pressure spray.	Use airless spray, air-assisted airless spray, electrostatic spray, high-volume/low-pressure spray.	Use airless spray, air-assisted airless spray, electrostatic spray, high-volume/low-pressure spray. x For touch-up and repair, a handheld air atomized spray gun with a resin container of no more than one quart capacity as part of the gun may be used.
Resin Baths	VOC	None.	None.	None.	None.	None.
Compound Limitations	VOC	Not use a polyester resin or cleaning material subject to this rule that, after December 4, 1990, was	None.	None.	A person shall not specify the use of any gel coat or polyester resin material subject to the provisions of this	None.
Compound Limitations						

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Performance Standard							
(continued)		<p>newly formulated to contain or reformulated to increase the content of, methylene chloride, CFC-11, CFC-12, CFC-113, CFC-114 or CFC-115.</p> <p>A person shall not sell or, offer for sale, a polyester resin or cleaning material subject to this rule that, after December 4, 1990, was newly formulated to contain or reformulated to increase the content of, methylene chloride, CFC-11, CFC-12, CFC-113, CFC-114 or CFC-115.</p> <p>A person shall not manufacture, sell, offer for sale, or supply any coating or cleaning materials for use in polyester resin operations unless polyester resin or cleaning material</p>				<p>rule that does not meet the limits and requirements of this rule where such applications result in a violation of this rule. The requirements of this Section shall apply to all written or oral contracts.</p> <p>A person shall not sell or offer for sale any gel coat or polyester resin material subject to the provisions of this rule that does not meet the limits and requirements of this rule where such applications result in a violation of this rule.</p>	

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Performance Standard						
Compound Limitations (continued)		container displays the content of methylene chloride, CFC-11), dichlorodifluoromethane (CFC-12), trichlorotrifluoroethane (CFC-113), dichlorotetrafluoroethane (CFC-114), or chloropentafluoroethane (CFC-115).				
Monitoring and Records	VOC	N Q Maintain current records of polyester resin materials and gel coats used, which provides manufacturer identification, material specifications, monomer content, content of any catalysts, fillers, and/or diluents, including thinners, and type of each resin or gel coat. Also maintain records of content of methylene chloride, CFC-11, CFC-12, CFC-113, CFC-114, CFC-115 contained in any polyester resin material or cleaning	N Q Shall maintain list of polyester resins, catalyst, cleaning material, % monomer in each polyester resin materials, and grams of VOC per liter for cleaning materials. For vapor suppressed resins maintain list of weight loss (gm/sq. m) during polymerization, monomer % and gel time. Records of amount of polyester resin materials and cleaning	N Q Daily records of the type and quantity of all resins, catalysts, and cleaning materials used. Records of VOC content, % weight, all polyester resin materials used or stored at the facility, VOC content of all cleaning materials used and stored at the facility, hours of operation, and key operating parameters for any add-on control equipment.	N Q Shall maintain list of polyester resins, catalyst, cleaning material, % VOC in polyester resin materials, and grams of VOC per liter for cleaning materials. For vapor suppressed resins maintain list of weight loss during polymerization, monomer % and gel time. Daily records of amount of polyester resin materials and cleaning	N Q Weekly reports of the manufacturer and product number of each polyester resin material and cleaning material used, amount of cleaning material both used and reclaimed or recycled, and the application method for each polyester resin and cleaning material used. Records of emission rate of each polyester resin material used, as either the ROC loss rate in grams/sq. m or as % monomer content, gel
Monitoring and Records (continued)						

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Performance Standard						
		<p>material used.</p> <p>For vapor suppressed resins maintain records showing manufacturer's information on the weight loss during polymerization.</p> <p>Maintain daily records of manufacturer's identification and amount of each polyester resin material and cleaning material used.</p> <p>Retain records for at least 3 years.</p>	<p>materials used, volume of resin and cleaning materials used for touch-up and repair, and record of hours of operation and key system operating parameters.</p> <p>All records shall be retained for the previous 24 month period.</p>	<p>For vapor suppressed resins maintain list of weight loss (gm/sq. m) during polymerization.</p> <p>All records shall be retained for the previous 24 month period.</p>	<p>materials used, volume of resin and cleaning materials used for touch-up and repair, and hours of operation and key system operating parameters.</p> <p>All records shall be retained for the previous 24 month period.</p>	<p>time, and ROC content in lb ROC per gallon of cleaning material. Daily reports of control efficiency monitoring information, and the quantity and type of polyester resin material used.</p> <p>All records shall be retained for the previous 24 month period.</p>
Storage	VOC	Use self-closing containers for all polyester resin, VOC containing cleaning materials and solvent-laden rags including waster materials except when accessed for use.	Use closed containers for storage of all uncured polyester resin materials, cleaning materials and any unused VOC-containing materials except when accessed for use.	x Use closed containers for storage of all polyester resin materials, cleaning materials or other VOC-containing materials except when accessed for use.	x Use closed containers for storage of all polyester resin materials, cleaning materials and any unused VOC-containing materials except when accessed for use.	Use closed containers for storage of all materials containing reactive organic compounds, used or unused, including but not limited to semi-solid or liquid polyester resin materials and solid or liquid cleaning materials.

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Performance Standard							
Disposal	VOC	See storage.	Use self-closing containers for the disposal of all uncured polyester resin materials, cleaning materials, waste materials, and any unused VOC containing materials.	Use self-closing containers for the disposal of all uncured polyester resin materials, cleaning materials, or any unused VOC containing materials.	x	Use self-closing containers for the disposal of all polyester resin materials, cleaning materials, waste materials, and any unused VOC containing materials.	See storage.

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